Astrophysics and Geophysics

AUTOMATED CLASSIFICATION OF GALAXIES USING LIGHT INTENSITY DISTRIBUTION

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Morphological classification of galaxies is going to play an important role in the analysis of millions of galaxy images from large sky surveys like that of Sloan Digital Sky Survey. This is also important for dealing with images from other sky surveys like the Hubble Deep Field project. We describe here a method to extract light intensity parameters that can be used as input for an artificial neural network classifier for automated classification of galaxies. In this method we find ellipses of several major axes on the galaxy that match closely with the eccentricity, orientation and center of the galaxy in the image. From this information we are able to compute two parameters that enable us to differentiate between galaxy types. We describe our technique and procedure in this presentation and discuss the results we have obtained so far.